Q.4

Prove that every odd Natural Number is of one of the forms $4n+1$ or $4n+3$.

Proof: Every ~~intege~~ ~~Natural~~ integer ~~Number~~ is of the forms $4n, 4n+1, 4n+2, 4n+3$.

since $4n = 2(2n)$, $4n$ is even.
since $4n+1 = 2(2n)+1$, $4n+1$ is odd.
since $4n+2 = 2(2n+1)$, $4n+2$ is even.
since $4n+3 = 2(2n+1)+1$, $4n+3$ is odd.

Since these forms cover all ~~Natural Numbers~~ integers, all odd Natural numbers are in the forms $4n+1$, and $4n+3$.

Thus, the statement is proven.

QED $\blacksquare$